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Technical Program

MONDAY, JUNE 14, 1993

8:30 AM–10:00 AM

SESSION I: OPENING SESSION

Chairman: H. Huang, COMSAT Laboratories

Co-Chairman: R. Gold, Pacific Monolithics

Congress Center Room 313

Welcome and General Remarks

MMWMC General Chairman: H. Huang

MMWMC Technical Program: R. Gold

I-1 8:45 am	(Invited) The Commercial and Military Markets for MMIC's, M.J.Reid, <i>Alpha Industries, Woburn, MA</i>	1
I-2 9:15 am	(Invited) MMICs for Commercial Application in Europe, F.A. Myers, <i>GEC-Marconi Materials Technology Ltd., Caswell, England</i>	*
I-3 9:45 am	(Invited) Present Status of Mobile Communication in Japan, M. Morishima, <i>NEC Corporation, Japan</i>	3

MONDAY, JUNE 14, 1993

10:40 AM–12:00 NOON

Congress Center Room 313

SESSION II: MMIC FOR PERSONAL COMMUNICATIONS

Chairman: R. Gold, Pacific Monolithics

Co-Chairman: H. Huang, Comsat Laboratories

II-1 10:40 am	(Invited) MMIC for PCN (Personal Communication Network) Applications, A. Javed, <i>Bell Northern Research, Ottawa, Canada</i>	*
II-2 11:10 am	GaAs JFET Front-End MMICs for L-Band Personal Communications, T. Ohgihara, S. Kusunoki, M. Wada and Y. Murakami, <i>Sony Corp. Research Ctr., Yokohama, Japan</i>	9
II-3 11:30 am	A High Performance 1.5dB Low Noise GaAs PHEMT MMIC Amplifier for Low Cost 1.5-8 GHz Commercial Applications, H. Morkner, M. Frank, and D. Millicker, <i>Hewlett-Packard CMCD R&D Division, Newark, CA</i>	13

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1:30 PM–3:10 PM
Congress Center Room 313

SESSION III: COMMERCIAL MMIC APPLICATIONS I

Chairman: S. MOGHE, NORTHROP/ESD

Co-Chairman: I. J. Bahl, ITT GaAs Technology Center

III-1 1:30 pm	High-Efficiency AlGaAs/GaAs HBT Power Amplifier MMIC for 1.9 GHz Japanese Digital Cordless Phone , S. Hara, H. Sato, J.K. Twynam, M. Akagi, N. Nambu, N. Tanba, K. Yoshikawa, T. Kinosada, M. Yagura, H. Tsuji, T. Shinozaki, T. Yoshimasu, T. Miyajima and T. Tomita, <i>Sharp R&D, Nara, Japan</i>	19
III-2 1:50 pm	A 2.4GHz Single Chip Transceiver , L.M. Delvin, B.J. Buck, J.C. Clifton, A.W. Dean, and A.P. Long, <i>GEC-Marconi Materials Technology, Caswell, UK</i>	23
III-3 2:10 pm	Low Voltage, High Power T/R Switch MMIC Using LC Resonators , T. Tokumitsu, I. Toyoda, and M. Aikawa, <i>NTT Radio Communication System Lab., Kanagawa, Japan</i>	27
III-4 2:30 pm	12 GHz Low-Noise MMIC Amplifier Designed with a Noise Model that Scales with MODFET Size and Bias , B. Hughes, J. Perdomo, and H. Kondoh, <i>Hewlett-Packard, Microwave Technology Division, Santa Rosa, CA</i>	31
III-5 2:50 pm	A 20-50 GHz MMIC Amplifier with 21 dBm Output Power and its Application as a Frequency Doubler , H. Kondoh, and A. Cognata, <i>Hewlett-Packard, Microwave Technology Division, Santa Rosa, CA</i>	35

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Congress Center Room 216

SESSION IV: MM-WAVE MMICs I

Chairman: V. Sokolov, Honeywell SRC

Co-Chairman: A. Chu, MITRE

IV-1 1:30 pm	W-Band Single-Chip Transceiver for FMCW Radar , K.W. Chang, G.S. Dow, H. Wang, T.H. Chen, K. Tan, B. Allen, J. Berenz, J. Wehling*, and R. Lin*, <i>Electronics & Tech. Div., *Advanced Technology Div., TRW, Redondo Beach, CA</i>	41
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IV-3 2:10 pm	A D-Band Monolithic Fundamental Oscillator Using InP-Based HEMT's , Y. Kwon, D. Pavlidis, T. Brock, and D.C. Streit*, <i>Solid State Electronics Lab., Univ. of Michigan, Ann Arbor, MI, *Electronic & Technology Div., TRW, Redondo Beach, CA</i>	49
IV-4 2:30 pm	A Broadband, Planar, Doubly Balanced Monolithic Ka-Band Diode Mixer , S.A. Maas, and K.W. Chang*, <i>Independent Consultant, Long Beach, CA, *TRW, ESG, Redondo Beach, CA</i>	53
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3:30 PM-5:10 PM
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Chairman: E.D. Cohen, DARPA
Co-Chairman: R.S. Kagiwada, TRW

V-1 3:30 pm	A Low Cost 77 GHz Monolithic Transmitter for Automotive Collision Avoidance Systems , L. Raffaelli, E. Stewart, R. Quimby, J. Borelli, A. Geissberger, and D. Palmieri, <i>Alpha Industries, Inc., Methuen, MA</i>	63
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SESSION VI: MM-WAVE MMICs II

Chairman: M. Cohn, Westinghouse
Co-Chairman: N. Camilleri, Motorola

VI-1 3:30 pm	InP-Based HBT Millimeter-Wave Circuit Performance to 40 GHz , K.W. Kobayashi, L.T. Tran, S. Bui, J. Velebir, A.K. Oki, D.C. Streit, and D. Nguyen, <i>TRW Electronic and Technology Div., Redondo Beach, CA</i>	85
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VI-3 4:10 pm	A Fully Integrated 35 GHz MMIC Receiver with On-Chip LO , R. Ramachandran, C. Woo, M. Nijjar, and D. Fisher, <i>Pacific Monolithics, Inc., Sunnyvale, CA</i>	93
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TUESDAY, JUNE 15, 1993

11:00 AM-12:00 NOON

Auditorium

SESSION VII: ADVANCED MMIC TECHNOLOGY

(Joint with IMS)

Chairman: M. Kumar, Paramax Systems Corp.

Co-Chairman: W. Niehaus, AT&T Bell Labs.

VII-1 11:00 am	A Highly-Efficient 7-Watt 16 GHz Monolithic Pseudomorphic HEMT Amplifier, H.Q. Tserng, and P. Saunier, <i>Central Research Laboratories, Texas Instruments,</i> <i>Dallas, TX</i>	105
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1:30 PM-2:50 PM

Auditorium

SESSION VIII: BROADBAND MMIC CIRCUITS

(Joint with IMS)

Chairman: D. Meharry, Lockheed Sanders

Co-Chairman: H.L. Hung, COMSAT

VIII-1 1:30 pm	A Highly Integrated MMIC K-Band Transmit/Receive Chip, H. Fudem, S. Moghe, G. Dietz, and S. Consolazio, <i>Northrop Electronic System Division, Rolling Meadows, IL</i>	119
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3:30 PM–4:50 PM

Auditorium

SESSION IX: MMIC CONTROL CIRCUITS

(Joint with IMS)

Chairman: E. Switzer, Electromagnetic Sciences

Co-Chairman: C. Huang, Anadigics

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IX-3	Narrow-Band MMIC Filters with Automatic Tuning and Q-Factor Control, P. Katzin, B. Bedard, and Y. Ayasli, <i>Hittite Microwave Corp., Woburn, MA</i>	141
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IX-4	A New Circuit Structure for Microwave Frequency Doublers, J. Fikart and Y. Xuan, <i>MPR Teltech Ltd., Burnaby, Canada</i>	145
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TUESDAY, JUNE 15, 1993

2:30 PM–5:00 PM

Congress Center Ballroom

INTERACTIVE FORUM-1

(Joint with IMS)

Interactive Monolithic Papers

OF-1-35	GaAs HBT PIN Diode Attenuators and Switches, K.W. Kobayashi, A.K. Oki, D.K. Umemoto, S. Claxton, and D.C. Streit, <i>TRW Electronic and Technology Division, Redondo Beach, CA</i>	151
OF-1-36	Passive FET MMIC Linearizers for C, X and Ku-Band Satellite Applications, A. Katz*, S. Moochalla, and J. Klatskin, <i>GE Astro Space Division, Princeton, NJ, *Trenton State College, Trenton, NJ</i>	155
OF-1-37	Low-Noise, Low DC Power Linear Amplifiers, P.K. Ikalainen, L.C. Witkowski, and K.R. Varian, <i>Texas Instruments, Dallas, TX</i>	159
OF-1-38	An MMIC Twin-TEE Active Bandpass Filter, F.J. Rosenbaum, R.O. Gregory, W.D. Richard, F.G. Kuhns, T.M. Trimble, and W. Ou*, <i>Washington University, St. Louis, MD, *Litton Solid State, Santa Clara, CA</i>	163
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